

NOTES BY THE EDITOR.

TORNADOES OF APRIL AND MAY, 1896.

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The tornadoes of May 15, 17, and 25, while not of extraordinary severity, swept through prosperous sections of the country, and caused great loss of life and destruction of property. Following quickly upon these disasters came the news of a violent tornado that cut a path of destruction through the heart of one of our great cities—an event that has made the month of May, 1896, historic. These violent disturbances, coming so quickly one upon another, have served to direct public attention afresh to the subject of tornadoes and their occurrence in certain sections of the country.

The press accounts of destructive storms, upon which the public depends for its information, while generally accurate as to the main facts of the storm, are often misleading as to the details. These accounts suffer, moreover, from the fact that the first news of a disaster is often based upon insufficient information, and almost always transmitted without verification. As a result, it has been found necessary to revise the press dispatches and to make careful inquiry of some one in the neighborhood, generally the postmaster, as to the facts concerning each storm, in order that its destructive effects, if any, may be truthfully recorded. It is desirable also to make a record of the number of violent storms that occur each year. This has been done during the last six years, during which time nearly 800 storms have been observed, an average of 129 per annum. The number of lives lost, on the average, each year is 243. These figures have no special significance, however, since the loss of life is so largely dependent upon the character of country passed over, whether thinly settled or populous.

In view of the fact that several lists of losses of life by tornadoes, in which the total loss is more or less overstated, have appeared in the press, it is deemed advisable to publish the following report, based upon more definite information than was obtainable at the time the press dispatches were prepared.

In a few cases the figures hereinafter given are not final, and in other cases there is some uncertainty as to the correctness of the reports. All such cases are being investigated. The number of deaths by lightning and drowning, the latter as a consequence of the so-called cloud-bursts, are also given.

TORNADOES, APRIL, 1896.

11th.—The winds assumed the violence of a tornado in portions of north Texas on the night of the 11th; one person was killed; property loss, small.

12th.—A tornado occurred in the vicinity of Cale, Ind. T. A dwelling, a church, and a schoolhouse were destroyed; no lives lost.

15th.—A severe thunderstorm, at times approaching the violence of a tornado, passed through Faulk County, S. Dak., in a northeasterly direction in the early morning of April 15; 2 people were killed and 3 injured; property loss about five thousand dollars (\$5,000). This storm was first observed at Burkmere, at 3 a. m. At Millard, 8 miles northeast of Burkmere, at 3.50 a. m., and at Cresbard, about 12 miles east-northeast of Millard, at 3 a. m. It is probable that several thunderstorms developed simultaneously in this region.

This storm occurred under rather exceptional conditions, so far as the location of the center of low pressure is concerned, the latter being southeast of Faulk County. A "high" was advancing from the northwest with general snow throughout Montana and North Dakota. The air temperature at the

time the storm occurred was probably not above 40° Fahrenheit, and snow was falling not more than 200 miles to the northwestward.

20th.—A tornado occurred in Sandusky County, Ohio, near Fremont; 3 killed and about 20 injured. Northern Ohio and western Pennsylvania were visited by severe thunderstorms on the afternoon of the 20th, but the tornadic formation was observed only in two places, viz, near Fremont and at Vickery, both in Sandusky County. The loss in this county alone was estimated at one hundred thousand dollars (\$100,000). The greatest destruction was in spots, the tornado lifting from the ground and descending again several miles distant. The following is an account of an eye witness of the storm:

At 2 p. m. I was standing on my porch and viewed the whole thing; saw it come for a mile; it seemed about 10 feet high and 8 feet in diameter; crept along the ground like a mammoth rock; smoke puffed at the top like an engine; when near Hendricks' it seemed to rise up and the smoke came out below and it all began to whirl around, then exploded and crashed into Hendricks' barn and house and smashed them completely; boards and everything blown in all directions; the cyclonic formation then started on its journey eastward, widening out as it went, demolishing houses and barns, etc., in its path; I was but half a mile from the storm and saw it all.

The path of destructive thunderstorms in Northern Ohio was from 15 to 20 miles wide, and extended across the entire State.

24th.—A house was blown down and 3 people were killed during a severe thunderstorm at Salem, Va.

25th.—A destructive tornado struck the eastern edge of Cloud County, Kans., on the 25th instant, passing eastward into Clay County, through a thickly settled and prosperous portion of the two counties; 8 people were killed and 20 injured. The path of the storm was nearly a half mile wide and about 20 miles long. Houses, barns, granaries, and fences were demolished, and the fragments strewn broadcast over the path of the storm. Newspaper reports state that hail fell, in some cases, 7½ inches in circumference, by actual measurement. Fifteen thousand dollars (\$15,000) is a conservative estimate of the loss to the buildings alone, 27 dwellings being totally destroyed and many more injured.

26th.—A tornado passed through Barnes County, N. Dak., on the afternoon of the 26th; 1 person was injured; property loss was small.

27th.—Two tornadoes occurred in Hanson and McCook counties, S. Dak., on the evening of the 27th; 2 persons were injured; property loss of both tornadoes about fifteen thousand dollars (\$15,000).

28th.—The daily press reports of this date contained accounts of cyclones said to have occurred near Grinnell and Waterloo, Iowa, and Centralia, Mo. Subsequent investigation proved that severe thunderstorms only occurred on this date.

Recapitulation for April.

Number of tornadoes.....	7
Number of lives lost.....	17
Number of persons injured.....	46
Property loss, estimated.....	\$139,000

TORNADOES, MAY, 1896.

Tornadoes occurred on ten days in the month, viz: 11th, 12th, 15th, 17th, 19th, 20th, 24th, 25th, 27th, and 28th. The severe storms of the month, considered from the standpoint of loss of life and property, were those of the 15th in Grayson and Denton counties, Tex.; 17th in Brown and Nemaha counties, Kans.; 24th and 25th in Dallas, Polk, and Jasper counties, Iowa; Oakland, Lapeer, and Macomb counties,

Mich.; 27th at St. Louis and other points in Missouri and Illinois, and on the 28th in eastern Pennsylvania.

The record follows:

11th.—A tornado was observed in Rice County, Kans., but it was not of great violence and passed over only a small portion of the county; no one was killed, and the property loss was quite small. On the same date a tornado was reported in Worthington, Minn. The storm was not severe and no lives were lost. The damage to buildings was about \$2,000.

12th.—Tornadoes of little violence occurred at widely separated points on the afternoon of this date. The most northerly storm occurred in the vicinity of Elkhorn, Nebr. Little damage was done. Mr. Carl Johnson, a farmer, was caught in the vortex and carried about 150 yards from the point where the storm first struck him. He escaped serious injury. Later in the day a storm of wind passed over Lincoln, Nebr., injuring 4 persons and damaging property to the extent of \$5,000 or \$6,000. A tornado occurred 5 miles north of Sterling, Kans., injuring 3 persons and destroying a number of houses. On the same afternoon two tornadoes occurred in northern-central Texas, one in Dallas County, near Lawrence, the other in the northwestern part of Navarro County, near Mestens and Frost; there was no loss of life, and the property loss did not exceed \$3,000.

15th.—A very destructive series of tornadoes occurred in Denton and Grayson counties, Tex., on the afternoon of this date; 61 people were killed at Sherman, and 150 injured; 3 were killed at Gribble Springs, 2 at Justin, and 12 at Howe and vicinity. The property loss is variously estimated at from \$150,000 to \$200,000.

On the same date 1 person was killed by a tornado at Moundridge, Kans., and 5 others were injured.

16th.—Sherrard, Ill., was visited by a strong wind in the afternoon of this date. An unfinished church was blown down killing 1 man and injuring others. The damage to property aggregated \$15,000.

17th.—A tornado passed over the northwestern corner of Graves and Marshall counties, Ky., on this date, destroying the residence of Anderson Jones, at Elva, and killing the entire family of 5 persons.

On the same date a series of very destructive tornadoes passed through the northeastern part of Kansas and southeastern Nebraska, crossed the Missouri River near Rulo, Nebr., and disappeared in Missouri. The formation was first observed south of Barnes, Washington County, Kans., about 4.30 p. m. Its motion was reported as being southeasterly to Irving in Marshall County, thence northeasterly to Frankfort. At the last-named place, although 40 dwellings were either razed to the ground or badly damaged, no one was killed, the people having fled to caves and cellars on the approach of the tornado.

From Frankfort the tornado's course was northeasterly, passing through the towns of Baileyville, Seneca, Oneida, Sabetha, and Reserve, Kans., and Falls City, Nebr. The storm's course in Missouri does not seem to have been marked

by loss of life or destruction of property. Twenty-five lives were lost in Kansas and Nebraska, and 73 injured. It is estimated that the damage to property will not fall far short of \$300,000.

19th.—A very severe thunderstorm passed over Eldon, Mo.; 9 people were injured, and the loss to property was estimated at \$40,000. On the same date a tornado passed through Rock County, Kans. The loss of property was about \$3,000.

20th.—Tornadoes were reported from three different sections of Kansas, viz: the southern end of Lyon County, 7 miles south of Emporia; at Maple Hill, about 15 miles north of Topeka, in Cowley County, and also in the eastern portion of Kay County, Cherokee Strip. No lives were lost and the property loss was small.

24–25th.—Severe storms, in some places assuming the character of tornadoes, visited Iowa on the night of the 24th and the morning of the 25th, and northern Illinois in the early morning of May 25, 1896. The greatest destruction was in Polk and Jasper counties, Iowa, and near Chicago, Ill. An independent series of tornadoes also occurred in Oakland, Macomb, and Lapeer counties, Mich; 19 people were killed in Iowa; 8 in Illinois, and 47 in Michigan. The number injured is unknown. The property loss in Iowa was about \$75,000; in northern Illinois, about \$15,000; near Chicago, about \$80,000, and in Michigan, nearly \$400,000. A tornado was observed west of Bangor, S. Dak., on the 25th. The property loss was small and no one was injured.

26th.—A tornado occurred at Wickliffe, Ky. No one was hurt and the damage was not great.

27th.—The St. Louis tornado and the violent storms in portions of Missouri and Illinois on this date form the subject of a separate article (see page 77).

28th.—A series of tornadoes occurred throughout eastern Pennsylvania and in New Jersey on this date; 1 person was killed at Columbia, Pa., and 20 were injured; 4 were killed in Montgomery and Bucks counties, Pa., and 4 injured.

Further details are awaited respecting tornadoes in Oklahoma and a few other points.

Recapitulation for May (the storms of May 27 at St. Louis and other points in Missouri and Illinois being given separately):

Number of tornadoes.....	24
Number of lives lost.....	209
Number of persons injured.....	Unknown.
Property loss (estimated).....	\$888,158
May 27 and 28.....	13,004,900
Total	\$13,893,058
Loss of life by the tornadoes of May 27 at St. Louis and at other points in Missouri and Illinois.....	306
Total deaths by windstorms	515
Losses of life by drowning during the month not directly chargeable to tornadoes	61
Losses of life by lightning.....	65
Grand total.....	641

METEOROLOGICAL TABLES.

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For text descriptive of these tables see p. 46.